

### **CLAIM AMENDMENTS**

The following listing of claims will replace all prior versions and listings of claims in this application. Please amend the claims as follows. A complete listing of claims and their status in the above-identified application is shown below.

1. (Currently Amended) ~~An non-photochromic optical article selected from the group consisting of plano lenses, ophthalmic lenses, sun lenses, windows, automotive transparencies, and aircraft transparencies, said optical article~~ formed from a polymerizable composition comprising a polymerizable ~~polyol(allyl carbonate)~~ monomer component and a nanoparticle material comprising alloys, metals, sulfides, carbides, tellurides, selenides, nitrides, or mixtures thereof, said polymerizable composition when at least partially cured having a refractive index of from 1.595 to 1.695.
2. (Previously presented) The optical article of claim 1 wherein said polymerizable monomer component is substantially aliphatic.
3. (Previously presented) The optical article of claim 1 wherein said nanoparticle material has an average particle size of from 5 to 100 nm.
4. (Previously presented) The optical article of claim 1 wherein said nanoparticle material has a refractive index of greater than 1.7.
5. (Previously presented) The optical article of claim 1 wherein said nanoparticle material has a refractive index greater than refractive index of said polymerizable monomer component.
6. (Canceled)
7. (Withdrawn) The polymerizable composition of claim 6 wherein said nanoparticle material is chosen from silicon, aluminum, indium, tungsten, cobalt, iridium, tin, zirconium, antimony, ruthenium, yttrium, titanium, tantalum, niobium, strontium, cadmium, lead, barium, magnesium, chromium, strontium titanate, and mixtures thereof.
8. (Withdrawn) The polymerizable composition of claim 6 wherein said nanoparticle material is chosen from diamond and sulfur.
9. (Previously presented) The optical article of claim 1 wherein said nanoparticle material comprises a surface modifying chemical.

10. (Previously presented) The optical article of claim 9, wherein said modifying chemical comprises a functionalizing agent and a hydrophobizing agent.
11. (Currently amended) The optical article of claim 10, wherein said functionalizing agent ~~can be chosen from~~ comprises materials having vinyl, epoxy, glycidoxy, (meth)acryloxy, sulfide, polysulfide, and mercapto reactive groups, ~~and/or~~ combinations thereof.
12. (Currently Amended) The optical article of claim 10, wherein said functionalizing agent ~~is chosen from~~ comprises mercaptoorganometallic compounds, bis(alkoxysilylalkyl)polysulfides, ~~and/or~~ mixtures thereof.
13. (Previously presented) The optical article of claim 10, wherein said hydrophobizing agent is chosen from non-sulfur organometallic compounds.
14. (Previously presented) The optical article of claim 1 wherein said nanoparticle material is present in an amount of from 0.5 percent by weight to no greater than 50% by weight, of the polymerizable composition.
15. (Canceled)
16. (Withdrawn) The polymerizable composition of claim 15 wherein said ethylenically unsaturated monomer is an aromatic monomer having at least two vinyl groups.
17. (Withdrawn) The polymerizable composition of claim 15 wherein said thiol monomer is a polythiol monomer having at least two thiol groups.
18. (Withdrawn) The polymerizable composition of claim 15 wherein said polycyanate prepolymer has a number average molecular weight of from 500 to 15,000.
19. (Withdrawn) The polymerizable composition of claim 1 wherein said polymerizable monomer component comprises a reaction product of:
  - (a) a prepolymer comprising a polycyanate and at least one active hydrogen material; and
  - (b) an amine-containing curing agent.

20. (Withdrawn) The polymerizable composition of claim 19, wherein said active hydrogen material is chosen from polyols, polythiols, materials having both hydroxyl and thiol groups, and mixtures thereof.
21. (Withdrawn) The polymerizable composition of claim 20 wherein said polyol is chosen from polyether polyols, polyester polyols, polycaprolactone polyols, polycarbonate polyols, polyurethane polyols, and mixtures thereof.
22. (Canceled)
23. (Canceled)
24. (Canceled)
25. (Previously presented) The optical article of claim 1, wherein said article has at least 50% transparency in a range of wavelengths from 400 to 700 nanometers.
26. (Currently Amended) An ~~non-photochromic~~ optical article selected from the group consisting of plano lenses, ophthalmic lenses, sun lenses, windows, automotive transparencies, and aircraft transparencies, said optical article formed from a polymerizable composition, said polymerizable composition comprising ~~a polymerizable polyol(allyl carbonate)~~ a polymerizable monomer component and a nanoparticle material having a surface modification, said nanoparticle material comprising alloys, metals, sulfides, carbides, tellurides, selenides, nitrides or mixtures thereof, said polymerizable composition when at least partially cured having a refractive index of from 1.595 to 1.695.
27. (Canceled)
28. (Canceled)
29. (Canceled)
30. (Canceled)
31. (Withdrawn) A method of preparing a polymerizable composition comprising:
  - (a) obtaining a polyurethane prepolymer;
  - (b) reacting said prepolymer with an amine-containing curing agent; and
  - (c) adding nanoparticle material.

32. (Withdrawn) A method of preparing an at least partially cured polymerizate comprising:
- (a) obtaining a polyurethane prepolymer, reacting said prepolymer with an amine-containing curing agent, and adding nanoparticle material to produce a polymerizable composition; and
  - (b) polymerizing and at least partially curing said polymerizable composition to produce said at least partially cured polymerizate.
33. (Withdrawn ) The method of claim 32 wherein said at least partially cured polymerizate has a refractive index of from 1.595 to 1.695.
34. (Withdrawn) The method of claim 33 wherein said at least partially cured polymerizate has an Abbe number of at least 25 and a density of no greater than 1.8 grams/cm<sup>3</sup>.
35. (Withdrawn) The method of claim 32 wherein said nanoparticle material comprises a surface modifying chemical.
36. (Canceled)
37. (Withdrawn) An optical article comprising a polymerizable composition which comprises:
- i. a prepolymer comprising an polycyanate and at least one active hydrogen material;
  - ii. an amine-containing curing agent; and
  - iii. a nanoparticle material.
38. (Canceled)
39. (Withdrawn) A photochromic article comprising a polymerizable composition which comprises:
- i. a prepolymer comprising an polyisocyanate and at least one active hydrogen material;
  - ii. an amine-containing curing agent; and
  - iii. a nanoparticle material.
40. (Currently Amended) ~~A non-photochromic optical article selected from the group consisting of plane lenses, ophthalmic lenses, sun lenses, windows, automotive transparencies, and aircraft transparencies, said optical article formed from a polymerizable composition comprising a polymerizable polyol(allyl carbonate) monomer component and a nanoparticle material,~~

~~said polymerizable composition when at least partially cured having a refractive index of from 1.595 to 1.695, and~~ The optical article of claim 1, wherein the polymerizable composition when cured has a density of no greater than 1.8 grams/cm<sup>3</sup>.

41. (Previously presented) The optical article of claim 40 wherein said polymerizable monomer component is substantially aliphatic.
42. (Previously presented) optical article of claim 40 wherein said nanoparticle material has an average particle size of from 5 to 100 nm.
43. (Previously presented) The optical article of claim 40 wherein said nanoparticle material has a refractive index of greater than 1.7.
44. (Previously presented) The optical article of claim 40 wherein said nanoparticle material has a refractive index greater than refractive index of said polymerizable monomer component.
45. (Canceled)
46. (Withdrawn) The polymerizable composition of claim 45 wherein said nanoparticle material is chosen from silicon, aluminum, indium, tungsten, cobalt, iridium, tin, zirconium, antimony, ruthenium, yttrium, titanium, tantalum, niobium, strontium, cadmium, lead, barium, magnesium, chromium, strontium titanate, and mixtures thereof.
47. (Withdrawn) The polymerizable composition of claim 45 wherein said nanoparticle material is chosen from diamond and sulfur.
48. (Previously presented) The optical article of claim 40 wherein said nanoparticle material comprises a surface modifying chemical.
49. (Previously presented) The optical article of claim 48, wherein said modifying chemical comprises a functionalizing agent and a hydrophobizing agent.
50. (Previously presented) The optical article of claim 49, wherein said functionalizing agent has reactive groups chosen from vinyl, epoxy, glycidoxy, (meth)acryloxy, sulfide, polysulfide, mercapto, and mixtures thereof.
51. (Previously presented) The optical article of claim 49, wherein said functionalizing agent is chosen from mercaptoorganometallic compounds, bis(alkoxysilylalkyl)polysulfides, and mixtures thereof.

52. (Previously presented) The optical article of claim 49, wherein said hydrophobizing agent is chosen from non-sulfur organometallic compounds.
53. (Previously presented) The optical article of claim 40 wherein said nanoparticle material is present in an amount of from 0.5 percent by weight to no greater than 50% by weight, of the polymerizable composition.
54. (Canceled)
55. (Withdrawn) The polymerizable composition of claim 54 wherein said ethylenically unsaturated monomer is an aromatic monomer having at least two vinyl groups.
56. (Withdrawn) The polymerizable composition of claim 54 wherein said thiol monomer is a polythiol monomer having at least two thiol groups.
57. (Withdrawn) The polymerizable composition of claim 54 wherein said polycyanate prepolymer has a number average molecular weight of from 500 to 15,000.
58. (Withdrawn) The polymerizable composition of claim 40 wherein said polymerizable monomer component comprises a reaction product of:
  - (a) a prepolymer comprising a polycyanate and at least one active hydrogen material; and
  - (b) an amine-containing curing agent.
59. (Withdrawn) The polymerizable composition of claim 58, wherein said active hydrogen material is chosen from polyols, polythiols, materials having both hydroxyl and thiol groups, and mixtures thereof.
60. (Withdrawn) The polymerizable composition of claim 59 wherein said polyol is chosen from polyether polyols, polyester polyols, polycaprolactone polyols, polycarbonate polyols, polyurethane polyols, and mixtures thereof
61. (Canceled)
62. (Canceled)
63. (Canceled)
64. (Canceled)

65. (New) The optical article of claim 1, wherein said polymerizable monomer component comprises ethylenically unsaturated monomers, polyol(allyl carbonate) monomers, thiol monomers, polyisocyanate monomers, polyisothiocyanates monomers, polyisocyanate prepolymers, polyepoxide prepolymers, or mixtures thereof.
66. (New) The optical article of claim 1, wherein said polymerizable composition further comprises a photochromic amount of an organic photochromic substance.